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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/776,264	02/12/2004	Koji Nitta	70456-012	4866

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EXAMINER	
VAN, LUAN V	
ART UNIT	PAPER NUMBER
1753	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/18/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/776,264	NITTA ET AL.	
	Examiner	Art Unit	
	Luan V. Van	1753	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 November 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 5-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 5-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Applicant's amendment of November 29, 2006 does not render the application allowable.

Status of Objections and Rejections

All rejections from the previous office action are withdrawn in view of Applicant's amendment.

New grounds of rejection under 35 U.S.C. 103(a) are necessitated by the amendments.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 5 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kasajima et al. (*Electrochemical Intercalation/Deintercalation of Lithium at an Isotropic Graphite in a LiBr-KBr-CsBr Eutectic Melt*) in view of Neipert et al.

Regarding claims 1 and 8, Kasajima et al. teach a molten salt bath for electrodeposition, containing lithium bromide, potassium bromide, and cesium bromide with the respective mole fraction of 56.1, 18.9 and 25.0 (see Experimental section), wherein a sum of the mole fraction of said lithium bromide and a mole fraction of said cesium bromide is 81.1 (= 56.1+25), which is within the range of the instant claim, with respect to the entire said molten salt bath, and a mole fraction of said lithium bromide to said cesium bromide is about 2.2 (= 56.1/25), which is within the range of the instant claim. With respect to the limitation of using the bath for electroforming, the limitation is an intended use of the instant invention and, thus, is not given patentability weight.

Kasajima et al. differ from the instant claims in that the reference does not explicitly teach the specific metal product of the instant claim.

Neipert et al. teach a method of producing titanium metal using a molten salt bath containing lithium bromide and cesium bromide (column 2 lines 44).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the bath of Kasajima et al. to form the titanium metal of Neipert et al., because titanium can be formed economically at low temperature

using the molten mixture of Kasajima et al. as suggested by Neipert et al. (column 1 lines 17-35 of Neipert et al.).

Regarding claim 5, the molten salt bath of Kasajima et al. has a eutectic composition, since it has the same composition as that of the instant claim.

Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kasajima et al. in view of Uriu et al. and Neipert et al.

Regarding claim 6, Kasajima et al. teach an electrodepositing method and a molten salt bath for electrodeposition, containing lithium bromide, potassium bromide, and cesium bromide with the respective mole fraction of 56.1, 18.9 and 25.0 (see Experimental section), wherein a sum of the mole fraction of said lithium bromide and a mole fraction of said cesium bromide is 81.1 (= 56.1+25), which is within the range of the instant claim, with respect to the entire said molten salt bath, and a mole fraction of said lithium bromide to said cesium bromide is about 2.2 (= 56.1/25), which is within the range of the instant claim. With respect to the limitation of using the bath for electroforming, the limitation is an intended use of the instant invention and, thus, is not given patentability weight.

Kasajima et al. differ from the instant claim in that the reference does not explicitly teach a resist to selectively mask the substrate or the specific metal product of the instant claim.

Uriu et al. teach a method of manufacturing a metal product, comprising the steps of: forming a resist pattern on a conductive substrate and exposing a portion of

said conductive substrate (example 1); immersing said conductive substrate having said resist pattern formed into an electrolytic bath for electroforming; and precipitating a metal at a portion where said conductive substrate is exposed.

Neipert et al. teach a method of producing titanium metal using a molten salt bath containing lithium bromide and cesium bromide (column 2 lines 44).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the method of Kasajima et al. by using the resist pattern of Uriu et al., because using a resist pattern would allow selective deposition of a metal on the exposed area of a conductive substrate. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have further modified the method of Kasajima et al. by forming the metal product of Neipert et al., because titanium can be formed economically at low temperature using the molten mixture of Kasajima et al. as suggested by Neipert et al. (column 1 lines 17-35 of Neipert et al.).

Regarding claim 7, Kasajima et al. teach the molten salt bath is set to 523K (or 250° C).

Response to Arguments

Applicants' arguments have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to the applicant's disclosure. Tokumoto teaches a method of electrodepositing titanium metal using a fused salt bath containing metal halides (column 1 lines 29-40).

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luan V. Van whose telephone number is 571-272-8521. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LVV
January 9, 2007

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